

# Date entry design for online forms and surveys

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## Background

Dates are typically collected using one of three designs:

- **Text entry**
  - **Dropdown**
  - **Calendar date picker**
- Research has shown that text entry or dropdown lists work well for users when they have to enter dates that are far away from the current date (referred to as distant dates), like date of birth, but calendar date pickers do not [1, 2, 5, 6].
- On mobile phones, text entry is faster to use than dropdown lists or hybrid designs (combination of dropdowns and text entry) for distant dates [7]. The iOS design on iPhones increases time-on-task compared to text entry for date of birth [4].

## Research Questions

For date entry, what is the best design for...

- Dates near the current date?
- Dates when the day of the week Sunday – Saturday is important?

## Experimental Design

- Two Split panel surveys using the Qualtrics platform
- Between-subject design
- 3 Design treatments
  - **Text entry** ■
  - **Dropdown** ■
  - **Calendar date picker** ■
- Study 1: Questions include: Select the date one week from today; Select April 21, 2022; Select May 21, 2022; and an ease of use question
- Study 2: Questions include: Enter the date of your last doctor's appointment; Enter last Friday's date; Enter the date of two Mondays ago

## Sample

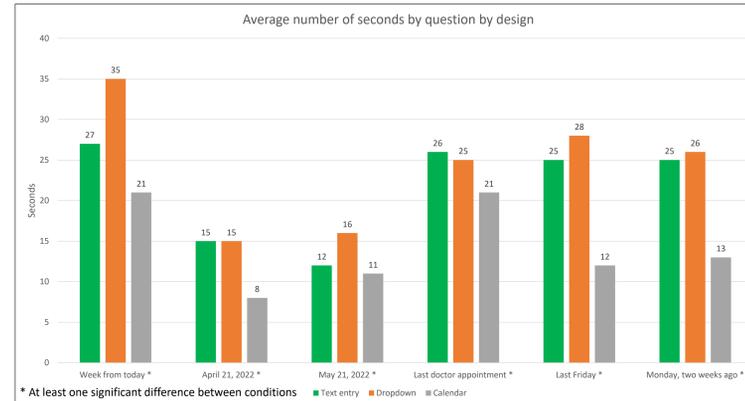
Two independent nationwide non-probability panels.

	Time Frame	Demographics	Device
Study 1 (n=500)	April 18, 2022 - May 3, 2022	61% female; mean age=43 (18-87); 66% White; 49% Hispanic; 21% High school or less; 50% bilingual	30% mobile/ 70% PC or Mac
Study 2 (n=500)	July 13 – 21, 2022	55% female; mean age=47 (18-98); 78% White; 7% Hispanic, no education measured, no bilingual measured	100% PC or Mac

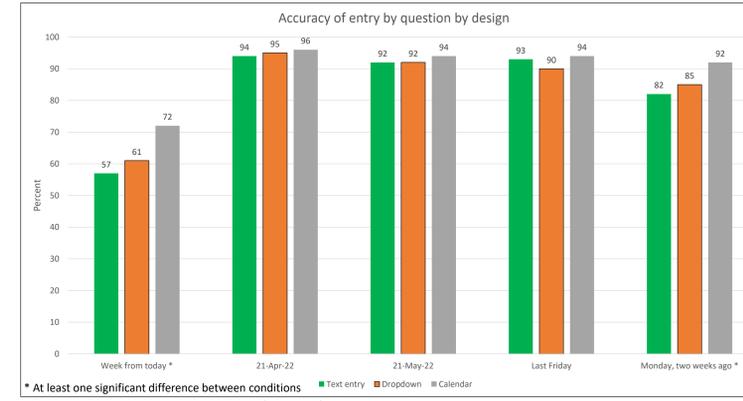
## Measures & Analyses

- Time-on-task
  - Mixed linear model
- Accuracy
  - Mixed logistic model
- Both models controlling for participant's age, sex, Hispanic origin, race. Independent variable: design treatment
  - Study 1 also included co-variates of education level (HS or less vs. higher); bilingual; device used
- Ease of use (Study 1 only) Frequency and chi-square statistic

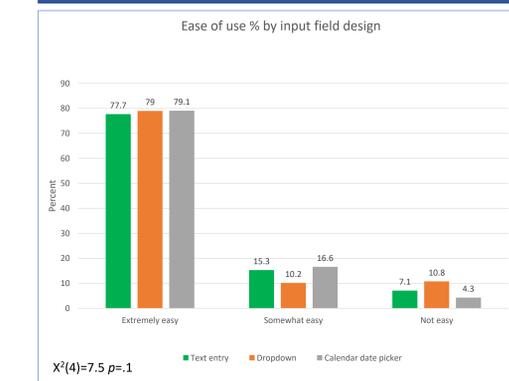
## Time-on-task



## Accuracy



## Ease of use



## Text entry with masking

1. Do not use if day of the week is important (Calendar is faster and more accurate) [current study]
2. Sufficient for other near dates (Calendar is faster to use, but has similar accuracy) [current study, 5 for smartphones]
3. Use for distant dates [from prior research 4, 7]

Masking in the field and field labeling in text entry fields is critical for this design to succeed [3]. There is still a possibility of confusing the month and day order.

## Dropdown lists

1. Do not use if day of the week is important (Calendar is faster and more accurate) [current study]
2. Do not use for other near dates (Calendar and text entry are faster to use) [current study]
3. Sufficient for distant dates (Text entry is faster to use) [from prior research 7]

If months are spelled out, dropdowns month and day is clear to users. iOS spinner for iPhones is difficult to use [4].

## Calendar date picker

1. Use if day of the week is important (This design is faster and more accurate) [current study]
2. Use for other near dates (This design is faster) [current study]
3. Do not use for distant dates [from prior research 1,2,3,5,6]

Be sure the user can also type in the response and the field is labeled. Obviously the design is not appropriate if only month or year is needed. Don't use a calendar picker if the month and year are not easy to change [1].

## Take away – When to use each design

	Dates where day of the week matters Sunday-Saturday	Near Dates	Distant dates (like date of birth)
Text entry with masking	☹️	😐	😊
Dropdown lists	☹️	😐 ☹️	😐
Calendar picker	😊	😊	☹️

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